# COMPUTER SCIENCE - CSC

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
<th>Prerequisite</th>
<th>Corequisite</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 108</td>
<td>Introduction to Web Computing</td>
<td>3</td>
<td>Introduction to computer science through web sites, web pages, web page programming, HTML, XML, CSS and JavaScript. The history and social impact of computers, networks and the World Wide Web are included in the course.</td>
<td></td>
<td>Fulfills College Core: Ethics, Field 7 (Mathematical Sciences)</td>
<td>Offered: fall &amp; spring.</td>
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<tr>
<td>CSC 111</td>
<td>Introduction to Programming</td>
<td>3</td>
<td>Algorithms, programming, computers, and applications to problem solving in Python.</td>
<td>Prerequisite: minimum grade of C in CSC 111 &amp; CSC 111L.</td>
<td>Fulfills College Core: Field 7 (Mathematical Sciences)</td>
<td>Offered: every fall, spring, &amp; summer.</td>
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<tr>
<td>CSC 111L</td>
<td>Introduction to Programming Laboratory</td>
<td>1</td>
<td>Required lab for CSC 111.</td>
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<td>Corequisite: CSC 111.</td>
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<tr>
<td>CSC 112</td>
<td>Data Structures</td>
<td>3</td>
<td>Basic concepts of object-oriented programming, recursion, and data structures, including lists, stacks, queues, and trees using Python.</td>
<td>Prerequisite: minimum grade of C in CSC 112 &amp; CSC 112L.</td>
<td>Fulfills College Core: Mathematics</td>
<td>Offered: every fall, spring, &amp; summer.</td>
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<tr>
<td>CSC 112L</td>
<td>Data Structures Laboratory</td>
<td>1</td>
<td>Required lab for CSC 112.</td>
<td></td>
<td>Corequisite: CSC 112.</td>
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<tr>
<td>CSC 213</td>
<td>Large Scale Programming</td>
<td>3</td>
<td>Introduction to the design, implementation, and testing of larger software systems. Intensive instruction in Java including graphics and object-oriented design.</td>
<td>Prerequisite: minimum grade of C in CSC 112 &amp; CSC 112L.</td>
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<td>Offered: every year.</td>
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<tr>
<td>CSC 213L</td>
<td>Large Scale Programming Laboratory</td>
<td>1</td>
<td>Required lab for CSC 213.</td>
<td></td>
<td>Corequisite: CSC 213.</td>
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<tr>
<td>CSC 253</td>
<td>Computer Hardware</td>
<td>3</td>
<td>Introduction to digital logic, Boolean algebra, hardware and computer organization. Overview of current architectures.</td>
<td>Prerequisite: minimum grade of C in CSC 111 &amp; CSC 111L.</td>
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<td>Offered: once a year.</td>
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<tr>
<td>CSC 253L</td>
<td>Computer Hardware Laboratory</td>
<td>1</td>
<td>Required lab for CSC 253.</td>
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<td>Corequisite: CSC 253.</td>
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<tr>
<td>CSC 251</td>
<td>Automata and Algorithms</td>
<td>3</td>
<td>Formal language theory including finite and pushdown automata, grammars, Turing Machines and the Halting Problem. Provides an introduction to the design and analysis of algorithms, including classes of problems and methods for analysis.</td>
<td>Prerequisite: minimum grade of C in CSC 112 &amp; CSC 112L.</td>
<td>Corequisite: CSC 281L.</td>
<td>Offered: every spring.</td>
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<tr>
<td>CSC 281L</td>
<td>Automata and Algorithms Laboratory</td>
<td>1</td>
<td>Required lab for CSC 281.</td>
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<td>CSC 281</td>
<td>Operating System Design and Distributed Computing</td>
<td>3</td>
<td>The design of operating system software, distributed applications, client/server and other models, security issues, and parallel programming on a High Performance Computing Cluster.</td>
<td>Prerequisite: CSC 253, CSC 253L, &amp; either minimum grade of C in CSC 112 &amp; CSC 112L or minimum grade of C in CSC 213 &amp; CSC 213L.</td>
<td>Corequisite: CSC 330L.</td>
<td>Offered: every fall.</td>
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<td>CSC 310</td>
<td>Information Organization and Processing</td>
<td>3</td>
<td>Databases, high-level organization and processing of information, SQL, and modern NoSQL systems.</td>
<td>Prerequisite: minimum grade of C in CSC 112 &amp; CSC 112L or a minimum grade of C in CSC 213 &amp; CSC 213L.</td>
<td>Corequisite: CSC 310L.</td>
<td>Offered: occasionally.</td>
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<tr>
<td>CSC 310L</td>
<td>Information Organization and Processing Laboratory</td>
<td>1</td>
<td>Required lab for CSC 310.</td>
<td></td>
<td>Corequisite: minimum grade of C in CSC 112 &amp; CSC 112L or minimum grade of C in CSC 213 &amp; CSC 213L.</td>
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<td>CSC 320</td>
<td>The Social Impact of Computing</td>
<td>3</td>
<td>Examines the societal issues involved in computing such as accessibility, ethical issues, advice, censorship, social media, and professional responsibilities. Includes applications of information literacy techniques to the major.</td>
<td>Prerequisite: minimum grade of C in CSC 112 &amp; CSC 112L or a minimum grade of C in CSC 213 &amp; CSC 213L.</td>
<td>Corequisite: CSC 320L.</td>
<td>Offered: occasionally.</td>
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<tr>
<td>CSC 330</td>
<td>Operating System Design and Distributed Computing</td>
<td>3</td>
<td>The design of operating system software, distributed applications, client/server and other models, security issues, and parallel programming on a High Performance Computing Cluster.</td>
<td>Prerequisite: CSC 253, CSC 253L, &amp; either minimum grade of C in CSC 112 &amp; CSC 112L or minimum grade of C in CSC 213 &amp; CSC 213L.</td>
<td>Corequisite: CSC 330L.</td>
<td>Offered: every fall.</td>
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<tr>
<td>CSC 351</td>
<td>Comparative Programming Languages</td>
<td>3</td>
<td>A study of programming languages and their implementations. Programming in logical and functional programming languages is included.</td>
<td>Prerequisite: minimum grade of C in CSC 112 &amp; CSC 112L or minimum grade of C in CSC 213 &amp; CSC 213L.</td>
<td>Corequisite: CSC 351L.</td>
<td>Offered: 2020-2021, 2022-2023.</td>
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CSC 351L Comparative Programming Languages Laboratory 1 Credit
Required lab for CSC 351.
Prerequisite: minimum grade of C in CSC 112 and 112L or minimum grade of C in CSC 213 & CSC 213L. Corequisite: CSC 351.
Offered: spring of odd-numbered years.

CSC 360 Intelligent Systems 3 Credits
An introduction to intelligent systems including logic and rule-based systems, machine learning, and applications of AI.
Prerequisite: completion of MAT 191 or MAT 230 and minimum grade of C in either CSC 112 & CSC 112L or CSC 213 & CSC 213L. Corequisite: CSC 360L.

CSC 360L Intelligent Systems Laboratory 1 Credit
Required lab for CSC 360.
Prerequisite: completion of MAT 191 or MAT 230 and minimum grade of C in either CSC 112 and 112L or in CSC 213 & CSC 213L. Corequisite: CSC 360L.
Offered: occasionally.

CSC 371 Cybersecurity Principles 3 Credits
This course examines the landscape and the broad areas of cybersecurity which includes topics such as: Symmetric & Public-Key Encryption, Access Control, Database Security, Malware, DoS (Denial-of-Service) Attacks, Intrusion Detection & Firewalls, Software Security, Security Management & Policies, Internet Security, and Legal & Ethical Aspects of Cybercrime. Students will also complete hands-on labs and exercises to reinforce their working knowledge of computer, network and information security topics.
Prerequisite: CSC 310 and CSC 310L; may be taken concurrently.
Corequisite: CSC 371L.
Offered: every fall.

CSC 371L Cybersecurity Principles Lab 1 Credit
Required lab for CSC 371L.
Prerequisite: CSC 310 and CSC 310L; may be taken concurrently.
Corequisite: CSC 371L.
Offered: occasionally.

CSC 380 Web Development 3 Credits
Web design principles, programming and scripting (both client-side and server-side), client/server mechanisms, search engines, and security.
Prerequisite: minimum grade of C in CSC 111 & CSC 111L. Corequisite: CSC 380L.

CSC 380L Web Development Laboratory 1 Credit
Required lab for CSC 380.
Prerequisite: minimum grade of C in CSC 111 and 111L. Corequisite: CSC 380.

CSC 391 Computer Science Junior Seminar 1 Credit
Topic-focused exploration involving students and faculty.
Prerequisite: permission of instructor.

CSC 395 Software Engineering 3 Credits
An examination of a variety of techniques and concepts that have been created to improve the software production process. Includes discussions of software processes, Agile software development, requirements engineering, testing, and software evolution.
Prerequisite: minimum grade of C in CSC 213 & CSC 213L. Corequisite: CSC 395L.

CSC 395L Software Engineering Lab 1 Credit
Required lab for CSC 395.
Prerequisite: minimum grade of C in CSC 213 and 213L. Corequisite: CSC 395.

CSC 400 Special Topics in Computing 3 Credits
Current topics of interest to faculty and students. Possible topics: cryptography, advanced scripting languages, networking, etc.
Prerequisite: Minimum grade of C in CSC 281, CSC 281L, MAT 111, and in either MAT 191 or MAT 230. Corequisite: CSC 400L. Restriction: must be junior or senior Computer Science major.

CSC 400L Special Topics in Computing Laboratory 1 Credit
Required lab for CSC 400.
Prerequisites: Minimum grade of C in CSC 281, CSC 281L, MAT 111 and in either MAT 191 or MAT 230. Corequisite: CSC 400. Restriction: must be junior or senior Computer Science major.
Offered: every spring.

CSC 480 Research Experience 0 Credits
Research project done in conjunction with a faculty advisor.
Offered: every fall & spring.

CSC 481 Research Experience 1 Credit
Research project done in conjunction with a faculty advisor for credit.
Offered: every fall & spring.

CSC 491 Computer Science Senior Seminar 1 Credit
Topic-focused exploration involving students and faculty.
Prerequisite: permission of instructor.

CSC 497 Internship 1-3 Credits
Special projects for local institutions/businesses. Must be related to a specific focused task and involve a significant learning component. Internships require an application and approval by the associate dean. Credit is not given simply for a part-time job. Approved project proposal and results documentation required. Does not count as a CSC elective.
Prerequisite: permission of chair & associate dean.

CSC 498 Independent Project 3 Credits
A directed project course that includes research, design, and implementation of a software system.
Prerequisite: permission of instructor.

CSC 499 Independent Study 1-4 Credits
An in-depth study of a specific computing topic. Independent studies require an application and approval by associate dean.
Prerequisite: junior or senior standing; & permission of instructor, chair, & associate dean.

CSC 400L Special Topics in Computing Laboratory 1 Credit
Required lab for CSC 400.
Prerequisites: Minimum grade of C in CSC 281, CSC 281L, MAT 111 and in either MAT 191 or MAT 230. Corequisite: CSC 400. Restriction: must be junior or senior Computer Science major.
Offered: every spring.

CSC 480 Research Experience 0 Credits
Research project done in conjunction with a faculty advisor.
Offered: every fall & spring.

CSC 481 Research Experience 1 Credit
Research project done in conjunction with a faculty advisor for credit.
Offered: every fall & spring.

CSC 491 Computer Science Senior Seminar 1 Credit
Topic-focused exploration involving students and faculty.
Prerequisite: permission of instructor.

CSC 497 Internship 1-3 Credits
Special projects for local institutions/businesses. Must be related to a specific focused task and involve a significant learning component. Internships require an application and approval by the associate dean. Credit is not given simply for a part-time job. Approved project proposal and results documentation required. Does not count as a CSC elective.
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